AREAS

design & development

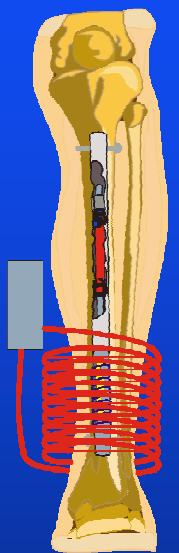
analysis & simulation

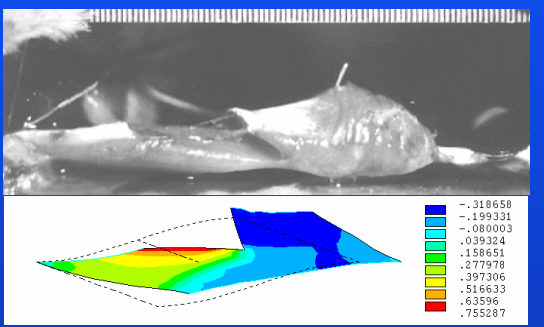
APPLICATIONS

orthopedics

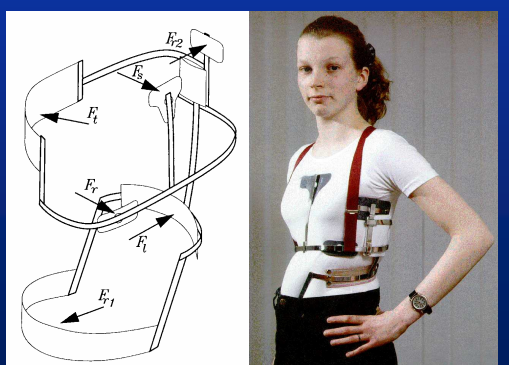
Rehabilitation
neurology

Design of an intramedullary leg lengthening device

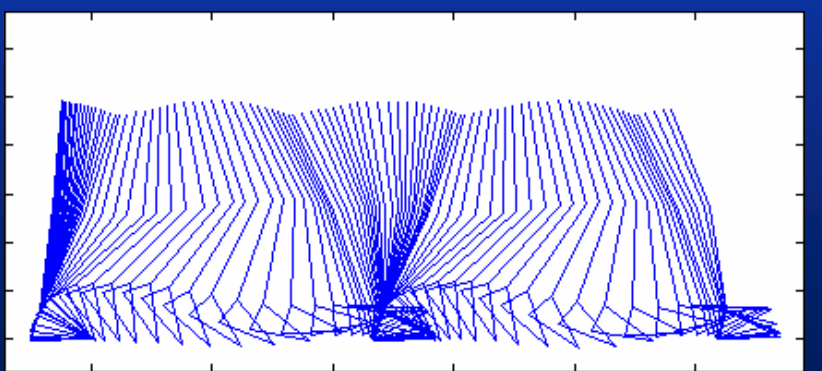




The effect of aponeurotomy: experiment and FEM simulation



Design of a brace for scoliosis correction



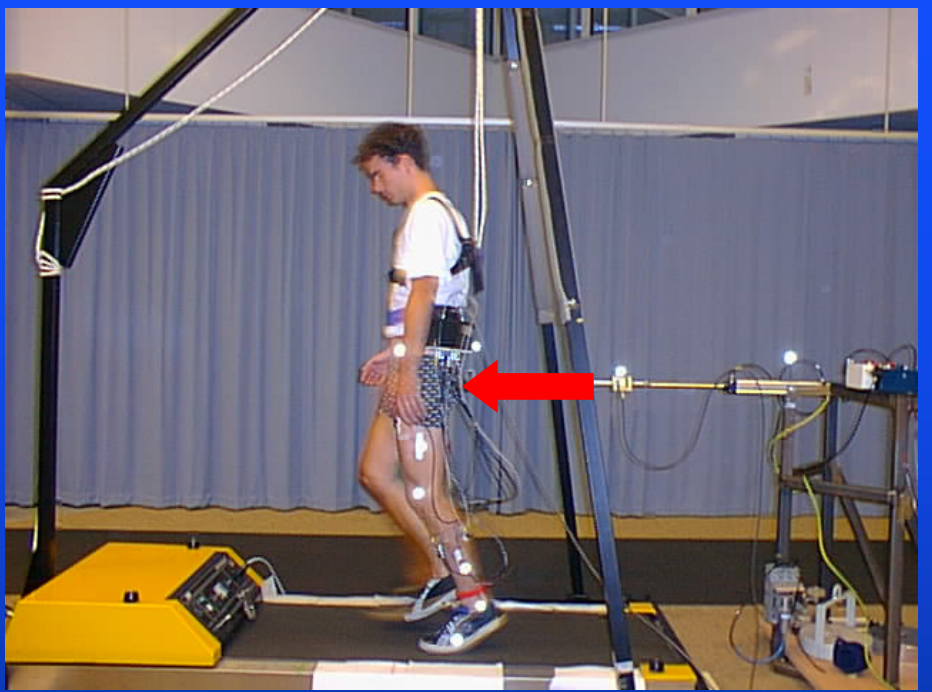
A control model of walking: Simulation of the initiation of gait

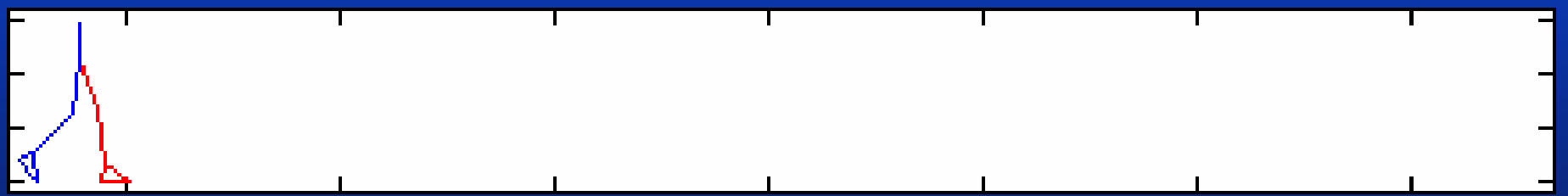
Stability of gait

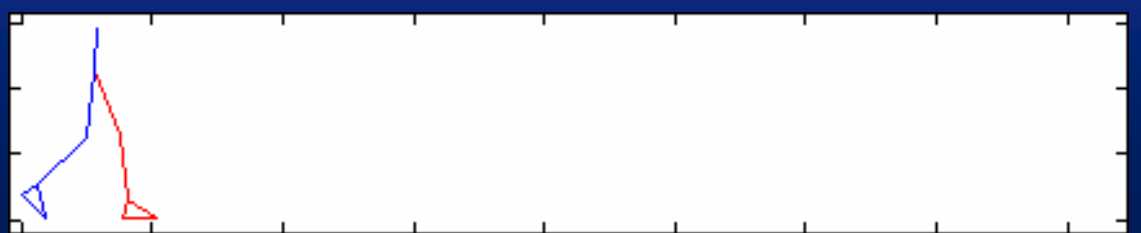
Limit cycles

Perturbations

Central pattern generator

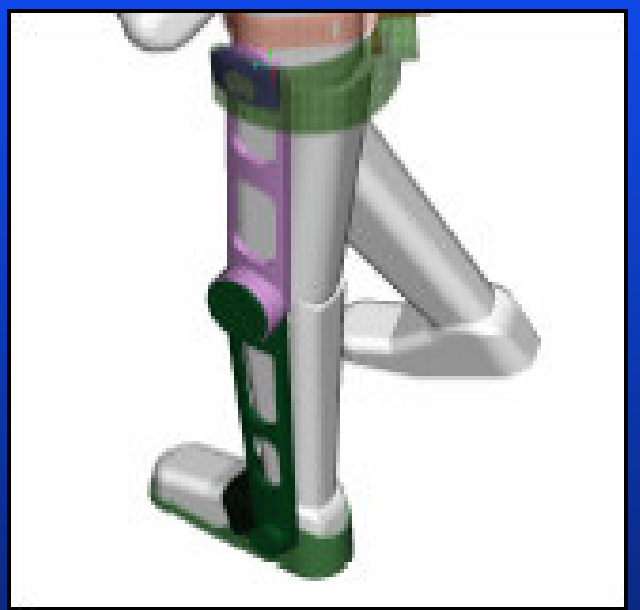




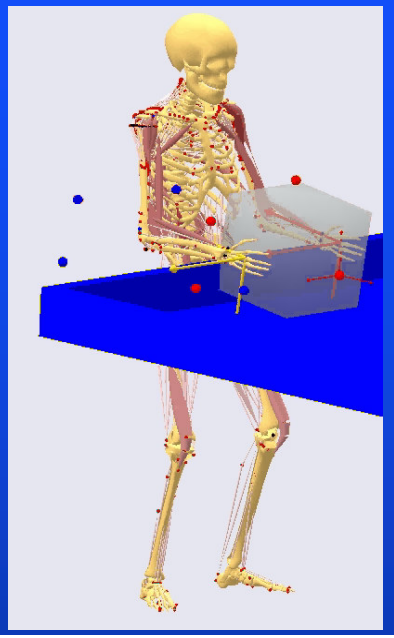


LOPES

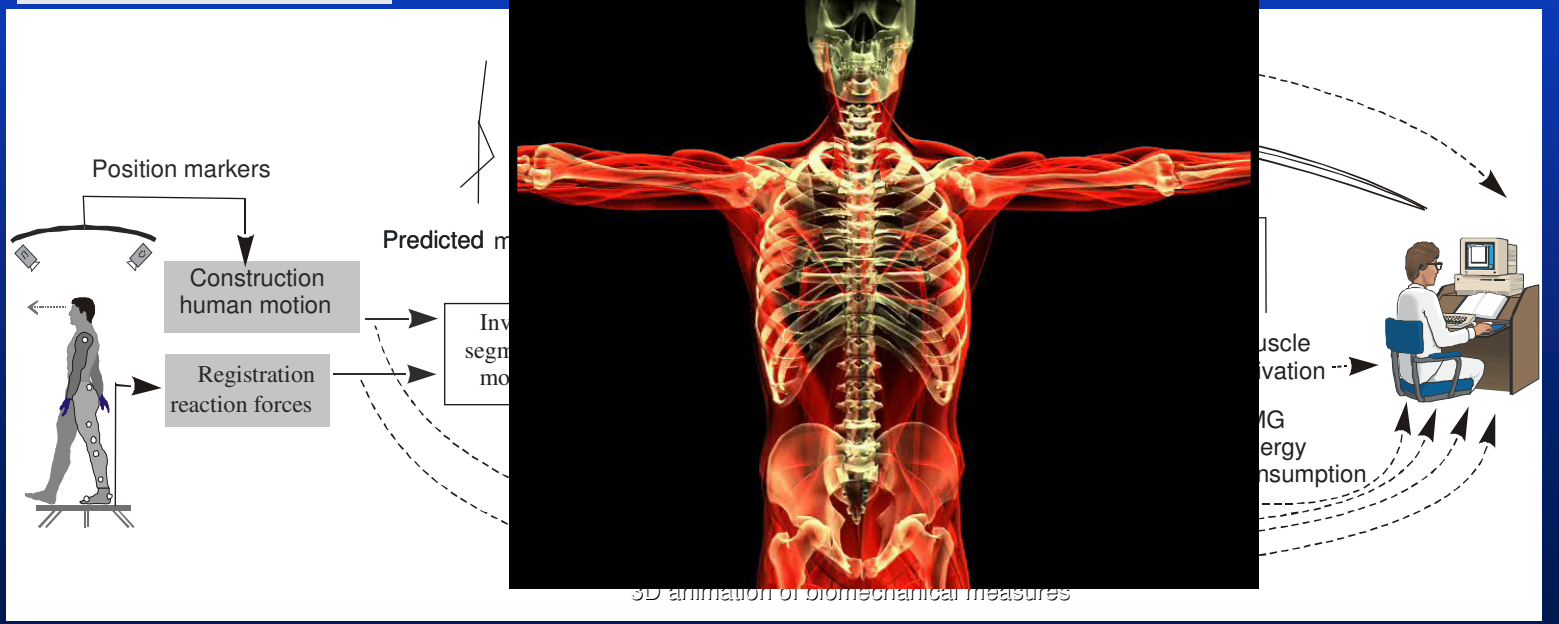
LOwer extremity **P**owered **E**xo**S**keleton



aangedreven – uitwendig skelet – voor de onderste extremiteiten



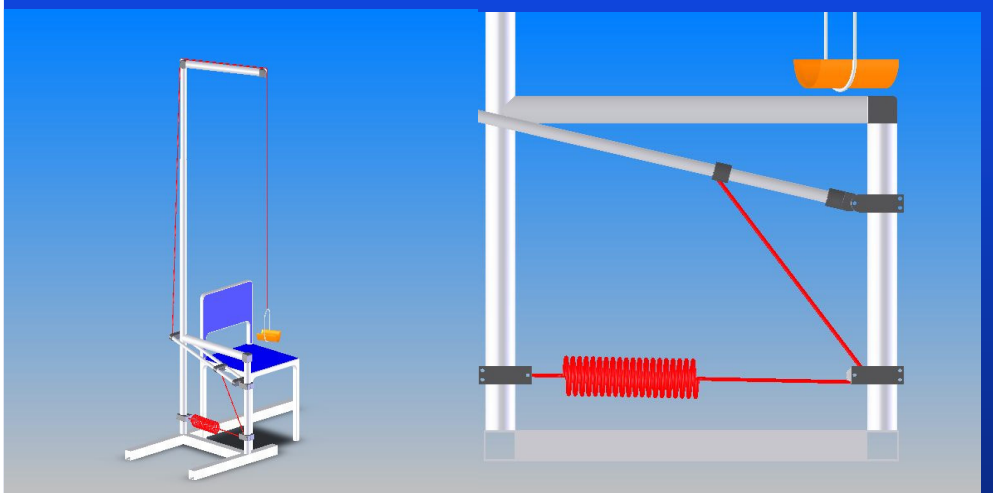
Biomechanical modelling and simulation of gait



3D animation of biomechanical measures

Actieve Revalidatie

- Zwaartekrachtcompensator



Mechanismen:
- ideale veren
- lineariteit door afstanden
- zwaartekrachtcompensatie in 3D ruimte
- compensatie op elleboog en pols
- makkelijk instelbare compensatie

- (Freebal = BALanced FREEdom)

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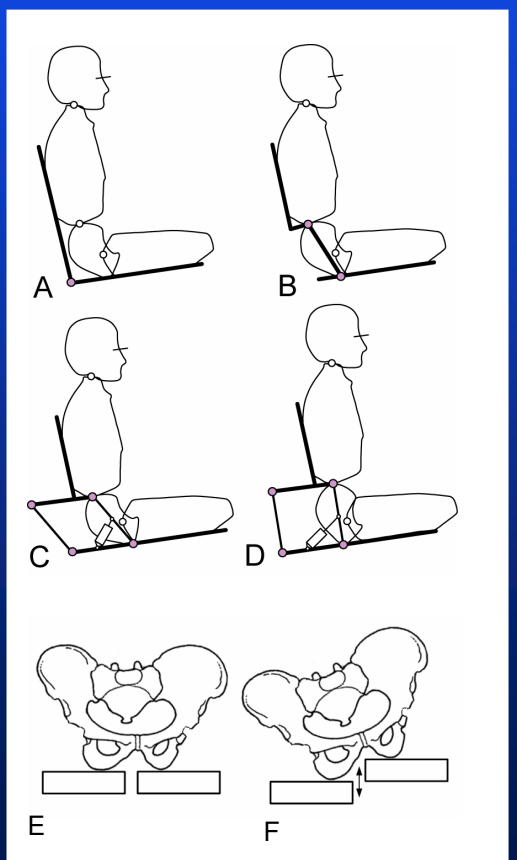
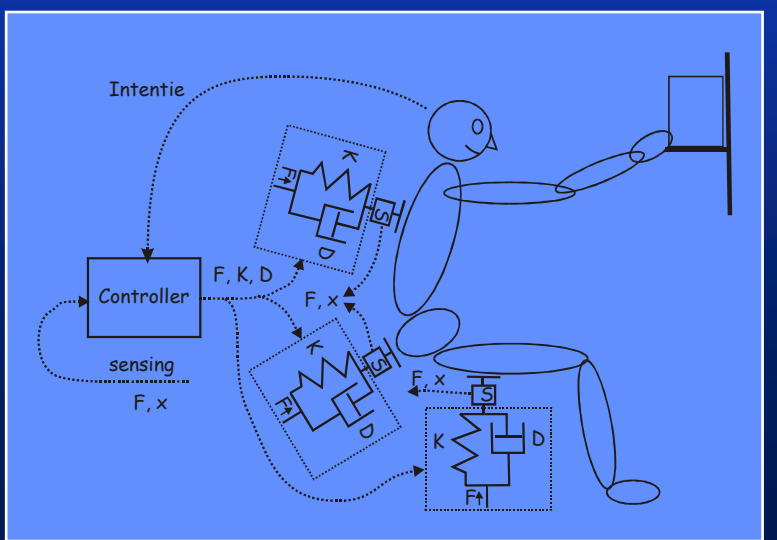
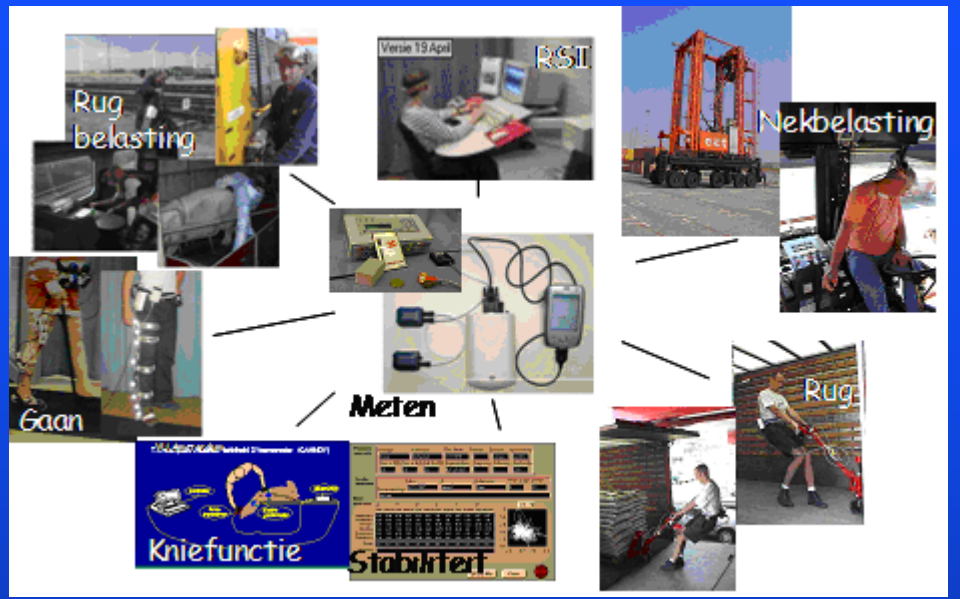
DYNASIT

ontwikkeling van een dynamisch actief zitsysteem

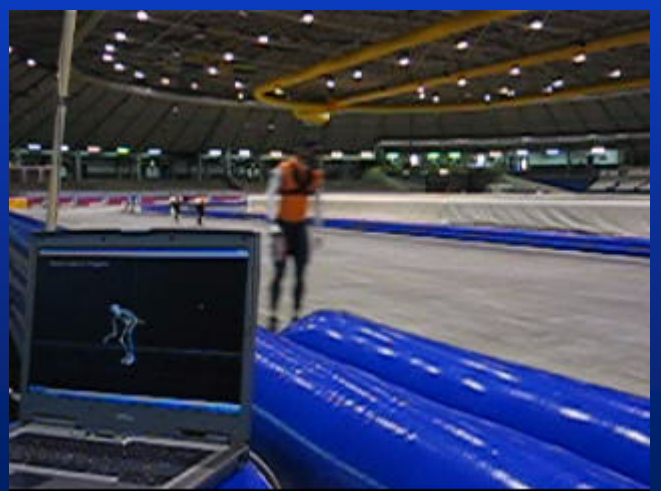


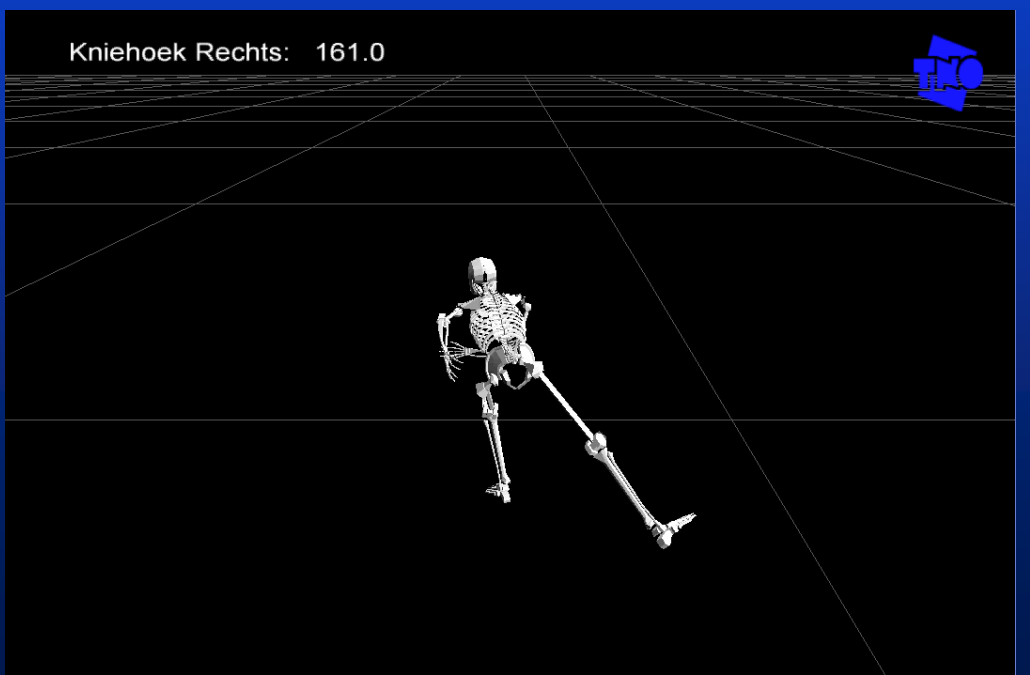




FreeMotion

Beweging in de gezondheidszorg





Future research

- Adaptations in a controlled system
  - instantaneous
  - Neural plasticity
  - Tissue adaptation
  - training
- Scoliosis correction
- Tissue modeling (skills lab)
- Ambolatory measuring devices
- Applications in sports??